

## **AMENDMENTS TO THE CLAIMS:**

Without prejudice, this listing of the claims replaces all prior versions and listings of the claims in the present application:

### **LISTING OF CLAIMS:**

1-12. (Canceled).

13. (Previously Presented) A method for reducing distortion of an optical pulse contained in a communication-transmitting luminous flux in an optical communication system caused by polarization mode dispersion, comprising:

driving a polarization-controlling device to adjust a polarization of the optical pulse so that a transmission quality of the optical communication system is maximized, wherein the driving of the polarization-controlling device functions in response to the transmission quality detected; and

using a small, coupled-out portion of the communication-transmitting luminous flux to determine the transmission quality of the optical communication system.

14. (Previously Presented) The method of claim 13, further comprising:

resetting the polarization of the optical pulse in predefined time intervals for optimizing communication.

15. (Previously Presented) The method of claim 13, wherein the polarization of the optical pulse is controlled at an input end of the optical communication system.

16. (Previously Presented) The method of claim 13, further comprising:

altering the polarization of the optical pulse at an output end of the optical communication system using the polarization-controlling device,

wherein the optical pulse propagates through an analyzer following the optical communication system.

17. (Previously Presented) An optical communication system having reducible distortion of an optical pulse propagating through the optical communication system and contained in a communication-transmitting luminous flux, comprising:

an optical transmission medium for transmitting the optical pulse;

a determining device to determine a transmission quality of the optical communication system, the determining device having an output;

a polarization-controlling device;  
a regulating device having an input;  
a beam splitter for coupling out and supplying a small portion of the communication-transmitting luminous flux to the determining device;  
wherein a signal from the output of the determining device is applied to the input of the regulating device, and  
wherein the regulating device is configured to drive the polarization-controlling device for changing a polarization of the optical pulse so that the transmission quality is optimized.

18. (Previously Presented) The optical communication system of claim 17, wherein the polarization-controlling device is disposed at the input of the optical transmission medium.

19. (Previously Presented) The optical communication system of claim 17, further comprising:  
an analyzer, the analyzer being disposed in a propagation direction of a light, downstream from the polarization-controlling device; and  
wherein the polarization-controlling device is disposed at the output of the optical transmission medium.

20. (Previously Presented) The optical communication system of claim 17, wherein the polarization-controlling device includes a first  $\lambda/4$  delay element, a  $\lambda/2$  delay element and a second  $\lambda/4$  delay element, the first  $\lambda/4$ ,  $\lambda/2$  and second  $\lambda/4$  delay elements being disposed in series as  $\lambda/4$ - $\lambda/2$ - $\lambda/4$  and being adjustable.

21. (Previously Presented) The optical communication system of claim 19, wherein the analyzer is a linear analyzer, and the polarization-controlling device includes at least an adjustable  $\lambda/4$  delay element and an adjustable  $\lambda/2$  delay element.

22. (Previously Presented) The optical communication system of claim 21, wherein at least one delay element includes a liquid crystal element.

23. (Previously Presented) The optical communication system of claim 21, wherein at least one delay element includes an electro-optical crystal.

24. (Previously Presented) The optical communication system of claim 21, wherein at least one delay element includes at least one of a mechanically adjustable element, an electromotively adjustable element and a piezoelectrically adjustable element of three fiber loops.

25. (New) The method of claim 14, wherein resetting the polarization compensates for time-related fluctuations of birefringence.